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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference 113858 BIO1/sko	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/NO 02/00025	International filing date (day/month/year) 18.01.2002	Priority date (day/month/year) 18.01.2002
International Patent Classification (IPC) or both national classification and IPC G01N15/08		
Applicant BIOPARKEN AS ET AL.		

- This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 6 sheets, including this cover sheet.

☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

 These annexes consist of a total of 2 sheets.

- This report contains indications relating to the following items:
 - ☒ Basis of the opinion
 - ☐ Priority
 - ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
 - ☐ Lack of unity of invention
 - ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
 - ☐ Certain documents cited
 - ☐ Certain defects in the international application
 - ☐ Certain observations on the international application

Date of submission of the demand 15.08.2003	Date of completion of this report 08.03.2004
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Rouault, P Telephone No. +49 89 2399-2776 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/NO 02/00025

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-13 as originally filed

Claims, Numbers

1-7 filed with telefax on 17.02.2004

Drawings, Sheets

1/2-2/2 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
- ☐ the claims, Nos.:
- ☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
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International application No. **PCT/NO 02/00025**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-4, 7
	No: Claims	5, 6
Inventive step (IS)	Yes: Claims	3, 4, 7
	No: Claims	1, 2
Industrial applicability (IA)	Yes: Claims	1-7
	No: Claims	

2. Citations and explanations

see separate sheet

1. Reference is made to the following documents:

- D1: 'Ambient oxygen ingress rate method-an alternative method to ox-tran for measuring oxygen transmission rate of whole packages', 'LARSEN HANNE ET AL', 'PACKAGING TECHNOLOGY AND SCIENCE', 13//30-09-2000, 233-241,
- D2: 'Oxygen permeance: a method applied to modified atmosphere packages containing fresh plant foods', 'FLODIN CARINA ET AL', 'PACKAGING TECHNOLOGY AND SCIENCE', 12//27-07-1998, 185-191

2. **Independent method Claim 1**

Document D2 discloses a method of determining the oxygen permeance of a package (see the abstract), which value can be considered to be equivalent to the oxygen penetration rate. This method comprises the steps of:

- flushing the package with an inert gas for a sufficiently period to ensure that the interior of the package contains only small amounts of the gaseous substance (see page 188, left-hand column, part "Recording of O₂ partial pressure"), and then seal off the package against the ambient atmosphere (see page 188, left-hand column, first paragraph);
- exposing the closed package to ambient atmosphere containing a known quantity of the gaseous substance (see page 188, right-hand column, last paragraph) for a first specified time period (see page 188, part "Calculation of permeance for whole packages", first sentence, and Fig. 2);
- when reaching the end of the first time period (i.e. after 15 min, see page 188, right-hand column, part "Calculation of permeance for whole packages", first sentence), determine a first concentration of the gaseous substance within the package at the end of the first time period;
- allowing the package to be exposed to the ambient gas for a second time period (see Fig. 2);
- when reaching the end of the second time period (for example 15 min after the end of the first period, since in D2 the O₂ partial pressure in the package is recorded every 15 min), determine a second concentration of the gaseous substance within the package at the end of the second time period, and employ the measured concentrations of the gaseous substances to predict the oxygen permeance of the package as a function of time (see pages 188 and 189, part

"Calculation of permeance for whole packages").

Therefore, the subject-matter of new independent method Claim 1 of the application differs from the method revealed in D2 only in the equation employed for predicting the oxygen penetration rate. This new feature with respect to D2 does not, however, appear to involve an inventive step, because the relationship disclosed in D2 on page 188, right-hand column, part "Calculation of permeance for whole packages", is equivalent to equation (4) indicated in the description of the application on page 4, which itself could be easily transformed by the skilled person into equation (5) of page 4 of the description, if that skilled person desired to determine the oxygen transmission rate, which value is often determined in the field of food packaging materials (see the description of the application, page 4, lines 9, 10).

It results from the above that since the skilled person starting from document D2 would arrive at the method of Claim 1 without requiring any inventive skills, the present application does not meet the requirements of Article 33 (3) PCT.

It is to be noted that the subject-matter of that claim is new and non-obvious with respect to document D1, because the method revealed therein requires a further step, namely, to inject prior to the measuring step a volume of inert gas in order to compensate for the volume of the withdrawn sample.

3. Independent method Claim 3

The subject-matter of Claim 3 is new and inventive with respect to the available prior art, which does not teach or suggest to use reference values for evaluating the penetration rates of oxygen into a closed package. By means of these reference values, it is possible to obtain the desired penetration rate after only one measurement.

4. Independent apparatus Claim 5

Since document D1 (see especially part "AOIR method: equipment and test procedure on pages 237 and 238, as well as Fig. 1) reveals a device having a source of pure inert gas, an injector that is capable of inserting and withdrawing

gas samples to/from the interior of a package, an oxygen analyser and means for calculating and displaying the oxygen transmission rates as a function of time as well the gas concentration within said packages, the subject-matter of independent apparatus Claim 5 is considered to lack novelty in view of document D1, contrary to the requirements of Article 33 (2) PCT.

5. Dependent claims

- 5.1 Since in documents D1 and D2, the gaseous substance is oxygen and the inert gas is pure nitrogen, the subject-matter of Claim 2, respectively, Claim 6, is not inventive, respectively, not new, in view of document D2, respectively, document D1.
- 5.2 Claim 4 depends on Claim 3. Its subject-matter is therefore, like that of Claim 3, new and inventive.
- 5.3 Claim 7 defines an apparatus that could be used for carrying out the method of Claim 3. For reasons similar to those indicated in paragraph 3 above, it would not be obvious for the skilled person in view of the available prior art to design an apparatus according to Claim 7.

6. Clarity

It is not allowable (Article 6 PCT) to refer to the description in the claims. This objection applies to Claims 1 and 3 which refer to equations that are only defined in the description.